

Claims

- [c1] 1.A gradient coil assembly for use in an MRI device, comprising:
a gradient tube extending along an axis, the tube including first and second gradient coils and a conductive compound disposed between the first and second gradient coils.
- [c2] 2.The gradient coil assembly of claim 1 wherein the conductive compound comprises an epoxy resin having a plurality of conductive particles.
- [c3] 3.The gradient coil assembly of claim 2 wherein the conductive particles comprise one of carbon particles, silver particles, copper particles, and gold particles.
- [c4] 4.The gradient coil assembly of claim 2 wherein the conductive compound further includes a chemical hardening compound.
- [c5] 5.The gradient coil assembly of claim 2 wherein the epoxy resin comprises a bisphenol-A resin.
- [c6] 6.The gradient coil assembly of claim 1 wherein the conductive compound comprises a polyester resin having a

plurality of conductive particles.

- [c7] 7.The gradient coil assembly of claim 6 wherein the conductive particles comprise one of carbon particles, silver particles, copper particles, and gold particles.
- [c8] 8.The gradient coil assembly of claim 6 wherein the compound further includes a chemical hardening compound.
- [c9] 9.The gradient coil assembly of claim 1 wherein each of the conductive particles is less than 10 μ m in diameter.
- [c10] 10.The gradient coil assembly of claim 1 wherein the conductive compound limits current flow through the compound to less than a predetermined current value.
- [c11] 11.The gradient coil assembly of claim 10 wherein the predetermined current value is 10 microamps.
- [c12] 12.A gradient coil assembly for use in an MRI device, comprising:
 - a gradient tube extending along an axis, the tube including first and second gradient coils and a potting compound layer of disposed between the first and second gradient coils, the potting compound layer having a plurality of conductive particles configured to limit a current flowing through the compound layer to less than

a predetermined current value.

- [c13] 13.A method for assembling a gradient coil assembly, comprising:
disposing a first gradient coil on a first gradient tube;
and,
disposing a conductive compound between the first gradient coil and a second gradient coil.
- [c14] 14.The method of claim 13 wherein the disposing a conductive compound layer includes vacuum impregnating the conductive compound between the first and second gradient coils.
- [c15] 15.The method of claim 13 wherein the conductive compound comprises an epoxy resin having a plurality of conductive particles.
- [c16] 16.The method of claim 15 wherein the conductive compound further includes a chemical hardening compound.
- [c17] 17.The method of claim 15 wherein the conductive particles comprise one of carbon particles, silver particles, copper particles, and gold particles.
- [c18] 18.The method of claim 13 wherein the conductive compound comprises a polyester resin having a plurality of conductive particles.

- [c19] 19. The method of claim 13 wherein the conductive compound limits current flow through the layer to less than a predetermined current value.
- [c20] 20. The method of claim 19 wherein the predetermined current value is 10 microamps.